WHAT IS CLAIMED IS:

1. A communications terminal comprising:

a modem receiving a modulated carrier signal and including a carrier signal tracking circuit for continuously adjusting an actual center frequency of said modem about a nominal center frequency of said modem so as to cause said actual center frequency of said modem to correspond to a center frequency of said modulated carrier signal;

a controller responsive to said carrier signal tracking circuit for supplying a band select signal; and

a band selector responsive to said band select signal for selecting one of a plurality of ranges of signal frequencies so as to cause said center frequency of said modulated carrier signal to be within one of said ranges including said nominal center frequency of said modem.

2. The communications terminal according to claim 1 wherein said band selector provides a signal to said modem defining said nominal center frequency.

3. The communications terminal according to claim 1 wherein said band selector causes a frequency of said modulated carrier signal to be converted so as to provide said modulated carrier signal having said center frequency of said carrier signal.

4. The communications terminal according to claim 1 further comprising an interface to a remote transmitter terminal providing said modulated carrier signal, said communications terminal providing said remote transmitter terminal with a control signal over said interface causing said remote transmitter terminal to change a frequency of said modulated carrier signal.

5. The communications terminal according to claim 4 wherein said communications terminal computes a frequency change value corresponding to a frequency

change required to cause said modulated carrier signal to have a center frequency within a range of frequencies included in a median one of said plurality of ranges of signal frequencies and wherein said communications terminal causes said remote transmitter terminal to change said frequency of said modulated carrier signal by approximately one half of said frequency change value.

6. The communications terminal according to claim 1 wherein said controller causes a frequency reference signal to be generated corresponding to a selected one of said plurality of ranges of signal frequencies including said actual center frequency of said modulated carrier signal.

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7. A radio communications terminal comprising:

a converter receiving a radio frequency signal and, in response, providing an intermediate frequency signal;

a frequency synthesizer responsive to a tuning signal for providing a local oscillator signal;

a radio modem receiving said intermediate frequency signal and including

(i) a demodulator recovering a digital data signal from said intermediate frequency signal, and

(ii) a phase-locked loop comparing a characteristic of said local oscillator and intermediate frequency signals and, in response, providing a comparison signal; and

a controller responsive to said comparison signal for providing said tuning signal.

8. The radio communications system according to claim 7 wherein said characteristic is a phase relationship.

9. The radio communications system according to claim 7 wherein said characteristic is frequency.

10. The radio communication terminal according to claim 7 wherein said tuning signal varies said frequency of said local oscillator signal in a plurality of discrete steps on either side of a nominal center frequency value.

11. The radio communication terminal according to claim 10 wherein said phase-locked loop is configured to lock to said intermediate frequency signal over a range of signal frequencies which is on the same order of magnitude as a frequency range between ones of said discrete steps.

12. The radio communication terminal according to claim 10 wherein said discrete steps are equally spaced, having a frequency difference between steps within a range of 50 to 200 kilohertz.

13. The radio communication terminal according to claim 7 further including an alarm corresponding to a predetermined value of said comparison signal.

14. The radio communication terminal according to claim 13 wherein said controller is responsive to said alarm for adjusting said tuning signal.

15. The radio communication terminal according to claim 7 further including a communication interface to a transmitting terminal originating said radio frequency signal, said controller negotiating with said transmitting terminal on said interface to change a frequency of said radio frequency signal by an amount equal to approximately one-half of a frequency change required to bring a frequency of said intermediate frequency signal within a capture range of said phase-locked loop.

16. The radio communication terminal according to claim 7 wherein said controller provides said tuning signal so as to produce a desired effect on said comparison signal.

17. The radio communication terminal according to claim 16 wherein said phase-locked loop is operable over a predetermined range of signal frequencies on either side of a nominal center frequency and said controller calculates a number of said discrete steps required so as to produce a desired effect on said comparison signal.

18. The radio communication terminal according to claim 17 wherein said controller supplies said tuning signal to correspond to said number of said discrete steps calculated.

19. The radio communication terminal according to claim 17 wherein said controller supplies said tuning signal to correspond to a portion of said discrete steps calculated and communicates a remaining portion of said discrete steps calculated to a transmitter terminal originating said radio frequency signal.

20. The radio communications terminal according to claim 7 wherein said controller includes a signal reacquisition routine causing said frequency synthesizer to provide local oscillator signals having a predetermined sequence of frequencies.

21. The radio communications terminal according to claim 7 further comprising a reference frequency oscillator supplying a reference signal, said converter additionally responsive to said reference signal for providing said intermediate frequency signal and said frequency synthesizer additionally responsive to said reference signal for providing said local oscillator signal.

22. A radio communications terminal comprising:

a frequency synthesizer responsive to a tuning signal for providing a local oscillator signal;

a radio modem receiving said local oscillator signal and including

(i) a phase-locked loop circuit receiving said local oscillator signal and, in response, providing a carrier signal, and

(ii) a modulator encoding a data signal onto said carrier signal to provide a modulated carrier signal;

a converter receiving said modulated carrier signal and, in response, providing a radio frequency signal; and

a controller responsive to a frequency shift command signal from a remote terminal receiving said radio frequency signal for providing said tuning signal.

23. The radio communications terminal according to claim 22 further comprising a reference frequency oscillator supplying a reference signal, said converter additionally responsive to said reference signal for providing said radio frequency signal and said frequency synthesizer additionally responsive to said reference signal for providing said local oscillator signal.

24. The radio communication terminal according to claim 22 wherein said tuning signal varies said frequency of said local oscillator signal in a plurality of discrete steps on either side of a nominal center frequency value.

25. The radio communication terminal according to claim 24 wherein said phase-locked loop is configured to lock to said intermediate frequency signal over a range of signal frequencies which is on the same order of magnitude as a frequency range between ones of said discrete steps.

26. The radio communication terminal according to claim 24 wherein said discrete steps are equally spaced, having a frequency difference between steps within a range of 50 to 200 kilohertz.

27. The radio communication terminal according to claim 22 wherein said phase-locked loop additionally provides an error signal, said controller responsive to said error signal for adjusting said tuning signal.

28. A method of operating a radio communications terminal comprising the steps of:

receiving a radio frequency signal;

converting said radio frequency signal to an intermediate frequency signal;

synthesizing a local oscillator signal in response to a tuning signal;

comparing a frequency of said intermediate frequency signal and a frequency of said local oscillator signal to supply an offset error signal;

providing said tuning signal in response to said offset error signal; and

recovering a digital data signal from said intermediate frequency signal.

29. The method according to claim 28 wherein said step of providing said tuning signal varies said frequency of said local oscillator signal in a plurality of discrete steps on either side of a nominal center frequency value.

30. The method according to claim 28 further including a step of providing an alarm corresponding to a predetermined value of said offset error signal.

31. The method according to claim 30 wherein said step of providing said tuning signal is performed in response to said alarm for adjusting said tuning signal.

32. The method according to claim 28 further comprising the step of negotiating with a transmitting terminal to change a frequency of said radio frequency signal by an amount equal to approximately one-half of a frequency change required to bring said frequency of said intermediate frequency signal within a predetermined capture range.

33. A radio communications system comprising:

(a) a transmitter terminal including

(i) a first frequency synthesizer responsive to a first tuning signal for providing a first local oscillator signal;

(ii) a first radio modem receiving said first local oscillator signal and including

a first phase-locked loop circuit supplying a carrier signal in response to said first intermediate frequency signal, and

a modulator encoding a data signal onto said carrier signal to supply a first modulated carrier signal;

(iii) an up-converter receiving said first modulated carrier signal and, in response, providing a radio frequency signal; and

(iv) a first controller responsive to a frequency shift command signal for providing said first tuning signal; and

(b) a receiver terminal including

(i) a down-converter receiving said radio frequency signal and, in response, providing a second modulated carrier signal;

(ii) a second frequency synthesizer responsive to a second tuning signal for providing a second local oscillator signal;

(iii) a second radio modem receiving said modulated carrier signal and including

a second phase-locked loop circuit responsive to said second local oscillator signal to supply (a) a second intermediate frequency signal and (b) an offset error signal in response to a difference between a frequency of said second modulated carrier signal and a frequency of said second intermediate frequency signal, and

a demodulator recovering said data signal from said second modulated carrier signal; and

(iv) a second controller responsive to said offset error signal for providing said second tuning signal and said frequency shift command signal.

34. The radio communication system according to claim 33 wherein said first and second tuning signals vary respective ones of said frequencies of said first and second local oscillator signals in a plurality of discrete steps on either side of respective nominal center frequency values.

35. The radio communication system according to claim 33 further including an alarm corresponding to a predetermined value of said offset error signal.

36. The radio communication system according to claim 35 wherein said second controller is responsive to said alarm for adjusting said second tuning signal and for providing said frequency shift command signal.

37. The radio communication terminal according to claim 33 wherein said second controller negotiates with said first controller to change a frequency of said radio frequency signal by an amount equal to approximately one-half of a frequency change required to bring said frequency of said second modulated carrier signal within a capture range of said second phase-locked loop.